

BOTTOM OXIDE FORMATION PROCESS FOR PREVENTING FORMATION OF VOIDS IN TRENCH

ABSTRACT OF THE DISCLOSURE

Embodiments of the present invention are directed to a method of forming a bottom oxide layer in the trench in semiconductor devices, such as Double-Diffused Metal-Oxide Semiconductor (DMOS) devices. In one embodiment, a method of forming a bottom oxide layer in a trench structure comprises providing a semiconductor substrate; forming a silicon nitride layer on the semiconductor substrate; forming a first oxide layer on the silicon nitride layer; forming a trench structure in the semiconductor substrate; forming a second oxide layer on a bottom and sidewalls of the trench and on a surface of the first oxide layer; removing the first oxide layer and the second oxide layer on the surface of the silicon nitride layer; and removing the second oxide layer on the sidewalls of the trench and a portion of the second oxide layer on the bottom of the trench.

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